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Claims

[c1] A ball apparatus comprising:

a. a shell portion defining an inner chamber;

b. a core portion disposed within said chamber;

c. a plurality of guide members disposed in said chamber each extending between said core and shell portions; and,

d. a plurality of displaceable weight members coupled to said guide members for anisotropic displacement within said chamber in a manner adaptive to a force imparted to said ball apparatus, each said weight member being resiliently biased towards a predetermined position relative to said core portion.

[c2] The ball apparatus as recited in Claim 1 further comprising at least one spring disposed between each said weight member and at least one of said core and shell portions for resiliently biasing said weight member to said predetermined position, said spring being coaxially coupled to one said guide member.

[c3] The ball apparatus as recited in Claim 2 wherein said spring is captured between said weight member and said shell portion to bias said weight member towards said

core portion.

[c4] The ball apparatus as recited in Claim 2 wherein said spring is coupled to said weight member and said core portion to extend therebetween, said spring biasing said weight member towards said core portion.

[c5] The ball apparatus as recited in Claim 2 wherein a plurality of said springs are coaxially coupled to at least one said guide members, said springs being incongruent in length along said guide member.

[c6] The ball apparatus as recited in Claim 2 wherein a plurality of said springs are coaxially coupled to at least one said guide members, said springs being incongruent in resilience.

[c7] The ball apparatus as recited in Claim 1 wherein each said guide member includes a rigid rod extending radially between said core and shell portions.

[c8] The ball apparatus as recited in Claim 1 wherein each said guide member includes a string segment coupled to said core and shell portions to extend radially therebetween.

[c9] The ball apparatus as recited in Claim 1 wherein said weight members are slidably coupled to said guide

members for respective displacement therealong one independent of the other.

[c10] The ball apparatus as recited in Claim 9 wherein each said weight member includes at least one bead having a through bore slidably receiving said guide member therethrough.

[c11] The ball apparatus as recited in Claim 1 wherein said shell portion defines a spherical enclosure about said compartment, said core portion being disposed in concentrically fixed manner relative to said shell portion.

[c12] The ball apparatus as recited in Claim 1 wherein said guide members are uniformly distributed about said core portion to each radiate outward therefrom.

[c13] A ball apparatus for generating adaptive rotational inertia comprising:

e. concentrically disposed shell and core portions, said shell portion defining an inner chamber about said core portion;

f. a plurality of elongate guide members each coupled to at least one of said core and shell portions to extend radially therefrom; and,

g. a plurality of independently displaceable weight members coupled to said guide members for

anisotropic displacement within said chamber responsive to a force imparted to said ball apparatus, each said weight member being resiliently biased towards a predetermined position relative to said core portion;

whereby a gyroscopic force is adaptively generated for said ball apparatus.

[c14] The ball apparatus as recited in Claim 13 further comprising at least one spring disposed between said weight member and at least one of said shell and core portions to bias said weight member towards said core portion.

[c15] The ball apparatus as recited in Claim 14 wherein a plurality of said springs are coaxially coupled to at least one said guide members, said springs being incongruent in at least one of a length parameter and a resilience parameter.

[c16] The ball apparatus as recited in Claim 14 wherein each said guide member includes at least one of a rigid rod and a taut string segment extending radially between said core and shell portions, at least one said weight member slidably engaging said guide member.

[c17] The ball apparatus as recited in Claim 13 wherein said guide members are uniformly distributed about said core

portion to each radiate outward therefrom.

[c18] A golf ball having adaptive rotational inertia comprising:

e. a shell portion defining an inner chamber;

f. a core portion disposed within said chamber, said core portion being fixed relative to said shell portion;

g. a plurality of guide members uniformly distributed about said core portion to extend radially to said shell portion therefrom;

h. a plurality of displaceable weight members each displaceably coupled in to at least one said guide member for displacement between first and second positions therealong in a manner adaptive to a force imparted to said ball apparatus; and,

i. at least one resilient member coupled to each said weight member for resiliently biasing said weight member to said first position.

[c19] The golf ball as recited in Claim 18 wherein said resilient member includes at least one spring coaxially coupled to one said guide member and disposed between said weight member and at least one of said shell and core portions to bias said weight member towards said core portion.

[c20] The golf ball apparatus as recited in Claim 19 wherein a plurality of said springs are coaxially coupled to at least

one said guide members, said springs being incongruent in at least one of a length parameter and a stiffness parameter.

[c21] The golf ball apparatus as recited in Claim 19 wherein each said guide member includes at least one of a rigid rod and a taut string segment extending radially between said core and shell portions.

[c22] The golf ball apparatus as recited in Claim 21 wherein said weight members are slidably coupled to said guide members for respective displacement therealong one independent of the other.